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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,293	11/29/2001	Si Q. Zheng	135779	4849

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EXAMINER	
LEE, DAVID J	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/998,293	ZHENG ET AL.	
	Examiner	Art Unit	
	David Lee	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/27/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 and 7-13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tancevski (US Patent No. 6,493,120).

Regarding claim 1, Tancevski teaches an optical switch (fig. 4) for routing optical information from an incoming optical transmission medium (fig. 4, 25) to one of a plurality of outgoing optical transmission media (fig. 4, 35), each outgoing media able to transmit optical information over a plurality of channels (col. 1, lines 18-21, and col. 1, lines 64-65); a delay buffer coupled to said optical switch for providing a plurality of different delays for delaying selected information between said incoming transmission medium and one of said outgoing optical transmission media (fig. 4, 20, and fig. 1A); scheduling circuitry associated with each respective outgoing medium (col. 1, lines 66-67 through col. 2, line 1, and column 2, lines 20-21), comprising an associative processor for storing information (col. 1, lines 1-4) on both unscheduled time for each channel on the respective outgoing medium and time gaps on each channel on the respective outgoing medium (col. 1, lines 66 to col. 2, line 12. It is inherent that a time gap/void is unscheduled time – i.e. filling a void/gap is filling unscheduled time - and

from here on in, they will be considered the same. Also, see column 2, lines 18-19: any unscheduled time will use a conventional scheduling routine for efficient allocation.)

Regarding claims 2 and 9, Tancevski teaches that incoming optical transmission medium and outgoing optical transmission media comprise optical fibers (col. 1, lines 58-59 and col. 1, line 64).

Regarding claims 3 and 10, Tancevski teaches that the scheduling circuitry includes an associative memory having a plurality of entries (col. 11, lines 2-3, lines 57) for storing a beginning value and an ending value for each instance of a time gap or unscheduled time (col. 8, lines 62-63).

Regarding claims 4 and 11, Tancevski teaches that each entry has a channel value indicating an associated channel on said respective outgoing optical transmission medium (col. 1, lines 18-21).

Regarding claims 5 and 12, Tancevski teaches that the unscheduled time is stored in an entry as a beginning value indicative of the beginning of the unscheduled time (col. 8, lines 62-63) and wherein the ending value is set to a predetermined value (col. 8, lines 62-63, and col. 2, lines 1-4: a predetermined value can be considered to be the ending length/position in time of a void or it can be considered to be "unscheduled" time wherein the ending value will be the location of the next data packet, and the schedule software program will use a conventional scheduling routine, col. 2, lines 17-20).

Regarding claim 7, Tancevski teaches that associative processor for each channel includes circuitry for searching through said entries of said associative memory

(col. 11, line 2 through col. 12, line 5: Tancevski explains how the processor searches through the entries/memory positions).

Regarding claim 8, Tancevski teaches a method of routing optical information through an optical burst-switched router including an optical switch for routing optical information from an incoming optical transmission medium to one of a plurality of outgoing optical transmission media (fig. 4, 25 and 35), each outgoing media able to transmit optical information over a plurality of channels (col. 1, lines 18-21, and col. 1, lines 64-65), and a delay buffer coupled to said optical switch for providing a plurality of different delays for delaying selected information between said incoming transmission medium and one of said outgoing optical transmission media (fig. 4, 20, and fig. 1A), comprising the steps of: for each respective outgoing optical transmission medium, storing information on both unscheduled time for each channel and time gaps on each channel in an associative memory (col. 2, lines 1-4); and searching said associative memories for available periods to schedule an optical burst (col. 11, lines 2-63).

Regarding claim 13, Tancevski teaches the method of claim 10 and further comprising indicating whether each entry is associated with either a time gap or with unscheduled time (as mentioned above, it is inherent that a time gap is unscheduled time. It can be argued that unscheduled time is not necessarily a time gap, however, a unscheduled time is merely a gap with a beginning value and an ending value corresponding to the position of the next data packet, in which case, the processor will use a conventional scheduling routine).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tancevski in view of Levi (US Patent No. 5,657,267).

Tancevski teaches all the limitations of claim 6 as applied above except for the limitation that the router contains a linear array of memory cells. Levi discloses a linear array of memory cells to store information (col. 4, lines 29-36). One of ordinary skill in the art at the time of invention would have been motivated to use the linear array of memory cells of Levi in the router of Tancevski because the topology provides symmetry in connections and provides compactness for each cell in the array. Therefore, it would have been obvious to one skilled in the art to use a linear array of memory cells as indicated by Levi to store entries of time gaps/unscheduled time in the router of Tancevski.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Aaronson et al. (US Patent No. 6,363,062) is cited to show a scheduling processor which determines gaps between control channel sessions for transmission of requested data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lee whose telephone number is (571) 272-2220. The examiner can normally be reached on Monday - Friday, 9:00 am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER

David Lee